High Conductance Fast Switching Diode

1N4148WT, 1N4448WT, 1N914BWT

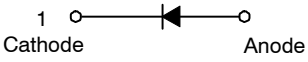
SCALE 4:1

SOD−523
CASE 502

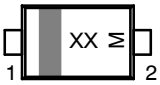
Features

- Fast Switching Diode (T_{RR} < 4.0 ns)
- Flat Lead, Surface Mount Device Under 0.70 mm Height
- Extremely Small Outline Plastic Package SOD523F
- Moisture Level Sensitivity 1
- Pb−Free Version and RoHS Compliant
- Matte Tin (Sn) Lead Finish
- Green Mold Compound

ELECTRICAL SYMBOL



MARKING DIAGRAM



XX = Specific Device Code
M = Date Code

DEVICE MARKING CODE

Device Type	Device Marking
1N4148WT	E1
1N4448WT	E2
1N914BWT	E3

Table 1. ABSOLUTE MAXIMUM RATINGS

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RSM}	Non−Repetitive Peak Reverse Voltage	75	V
V_{RRM}	Repetitive Peak Reverse Voltage	75	V
I_{FRM}	Repetitive Peak Forward Current	300	mA
T_J	Operating Junction Temperature Range	−55 to +150	°C
T_{STG}	Storage Temperature Range	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Table 2. THERMAL CHARACTERISTICS

Symbol	Parameter	Value	Units
P_D	Power Dissipation (T_C = 25°C)	200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	500	°C/W

3. Device mounted on FR−4 PCB minimum land pad.

Table 3. ELECTRICAL SPECIFICATIONS T_A = 25°C unless otherwise noted

Symbol	Parameter		Test Conditions	Min	Typ	Max	Units
BV_R	Breakdown Voltage		I_R = 100 μA I_R = 5 μA	100 75			V
I_R	Reverse Current		V_R = 20 V V_R = 75 V			25 5	nA μA
V_F	Forward Voltage	1N4448WT / 914BWT 1N4148WT 1N4448WT / 914BWT	I_F = 5 mA I_F = 10 mA I_F = 100 mA	0.62		0.72 1 1	V
C_O	Diode Capacitance		V_R = 0, f = 1 MHz			4	pF
T_{RR}	Reverse Recovery Time		I_F = 10 mA, V_R = 6.0 V I_{RR} = 1 mA, R_L = 100 Ω			4	nS

TYPICAL PERFORMANCE CHARACTERISTICS

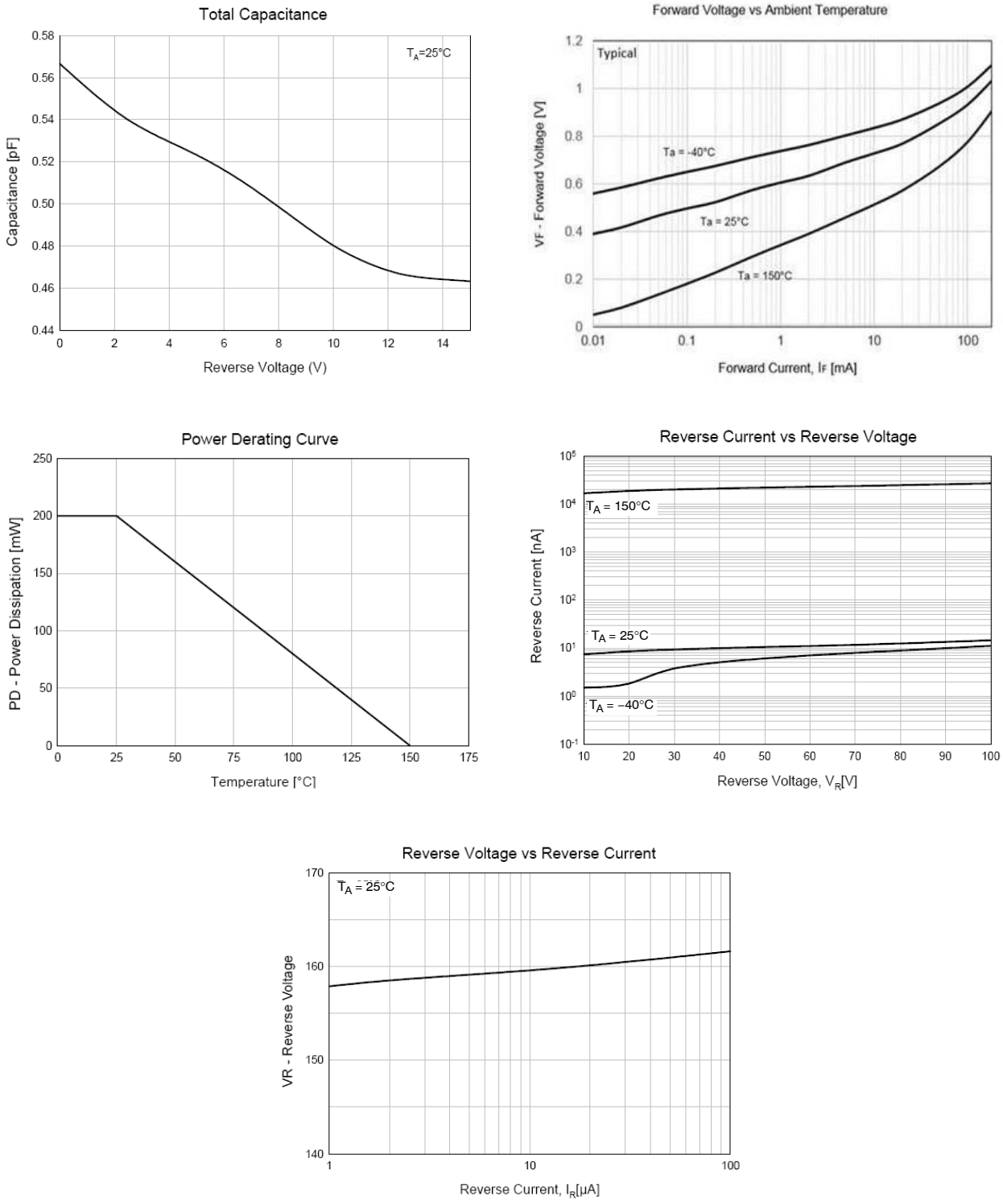
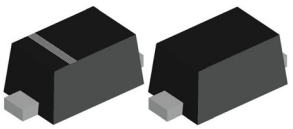
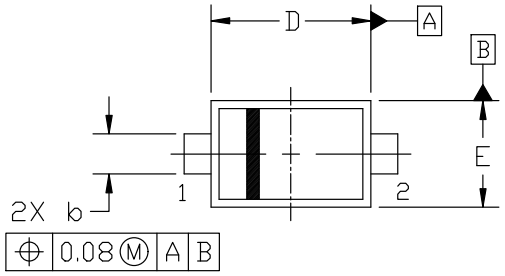


Figure 1. Typical Performance Characteristics

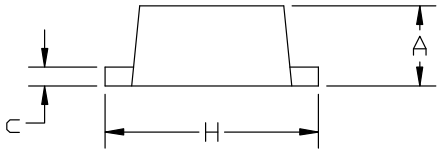


SOD−523 1.20x0.80x0.60
CASE 502
ISSUE F

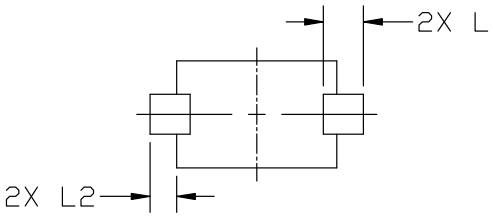
DATE 08 FEB 2024



TOP VIEW



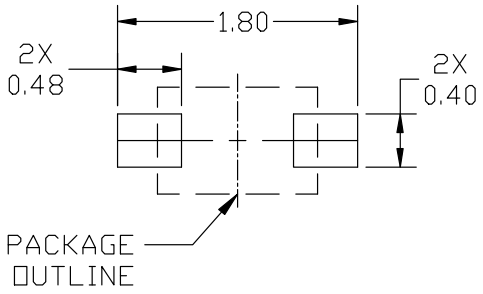
SIDE VIEW



BOTTOM VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH, MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

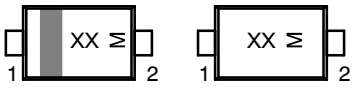
	MILLIMETERS		
DIM	MIN.	NOM.	MAX.
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
H	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25



RECOMMENDED MOUNTING FOOTPRINT

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference manual, SOLDERRM/D.

GENERIC MARKING DIAGRAM*



STYLE 1 STYLE 2

XX = Specific Device Code
M = Date Code

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “▪”, may or may not be present. Some products may not follow the Generic Marking.

STYLE 1:
PIN 1. CATHODE (POLARITY BAND)
2. ANODE

STYLE 2:
NO POLARITY

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DESCRIPTION:	**SOD−523 1.20x0.80x0.60**		**PAGE 1 OF 1**

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